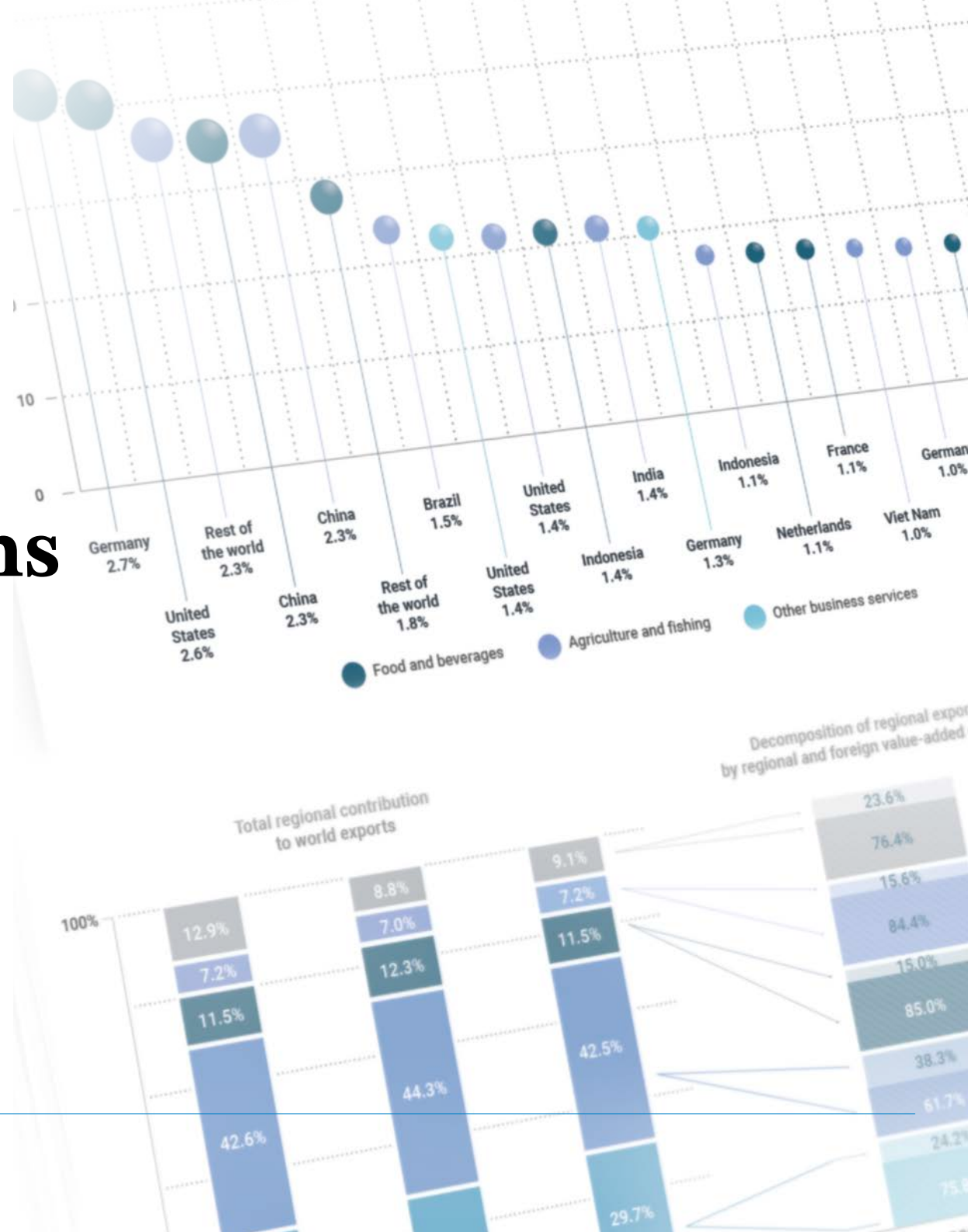


Global Value Chains Sectoral Profiles



User guide

Version 2024



Technical note

In GVCs, intermediate goods and services may cross borders several times, first as exported by their producer then re-exported by industrial partners in charge of next production stages, as embedded in other intermediate or final products. Let's consider the following supply chain sequence: a Japanese company produces integrated circuits that are exported to Singapore electronics industry to manufacture chipsets which are in turn exported to a smartphone assembler in Viet Nam. In such a case, the domestic value of Japan integrated circuit is counted multiple times, that is in Japan, Singapore and Viet Nam exports. Therefore, the domestic and foreign value-added contents of exports as well as GVC participation indicators shown in this report may include a part of double counting.

The WTO Global Value Chains (GVCs) Sectoral Profiles provide insights on value-added exchanges that take place between economies and industries within a specific sector.

The aim is to provide trade analysts and policy makers with a broad picture of international production and trade linkages in the sector under review.

The profiles are based on a set of graphs that show the degree of interdependence between economies and industries as well as the main GVC players.

The "Overview" section outlines the main features of GVCs in the sector and summarises the key insights of the profile.

This user guide is based on the food and beverages industry as an example to assist the reader in understanding the information supplied.

The data used for this report are estimates based on the Asian Development Bank (ADB) Multi-Regional Input-Output (MRIO) tables (June 2023 version) and Trade in Value Added (TiVA) indicators. They cover trade in goods and services and were available, at the time of production, up until 2022 for a set of 72 economies and 35 sectors. The latter are classified according to the International Standard Industrial Classification (ISIC), Revision 3.1.

See the **Annex** for the list of economies and industries as well as the **Glossary** of main terms used in the profiles.

Sectoral linkages

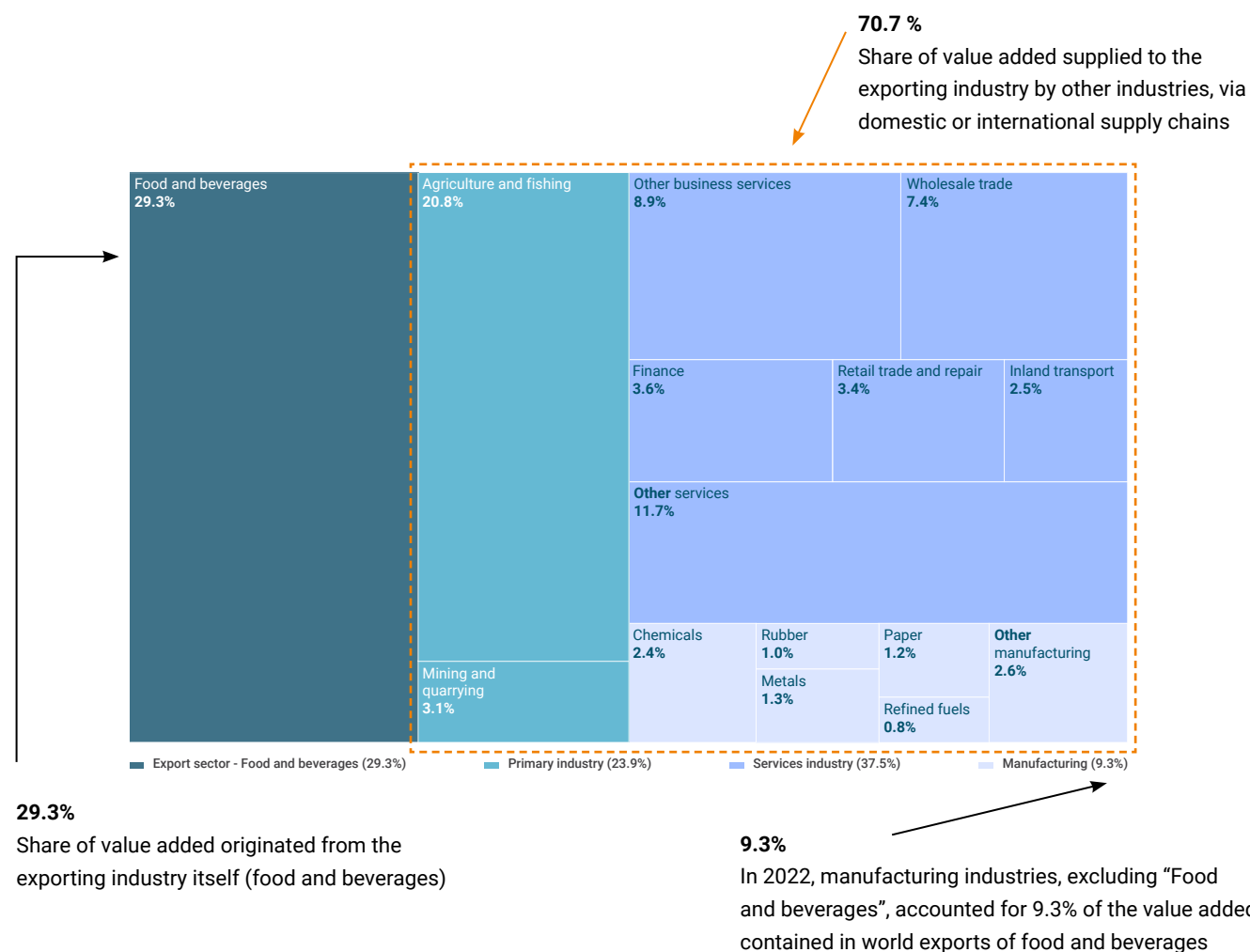
Numerous industries interact within supply chains, exchanging goods and services in the production of exports. Conventional trade statistics may suggest that 100% of the content in exported goods and services come from the exporting country and industry. However, this is not true, especially for goods and services produced within supply chains. For instance, TiVA data reveal the importance of services used as inputs for the manufacturing of goods.

Figure 1 presents the sectoral value-added origin of world exports for the industry under review. It shows the level of value-added inputs received by the exporting industry ("Food and beverages") from other supplying industries in primary, manufacturing and services sectors.

Figure 1

Sectoral origin of the value added in world exports of food and beverages, 2022

Share of total global exports of food and beverages, in per cent)



Source: WTO calculations based on ADB data (June 2023 version).

Regional patterns

The regional dimension of value chains is significant as geographical proximity and a proper division of roles among neighbouring economies are key for effective supply chains.

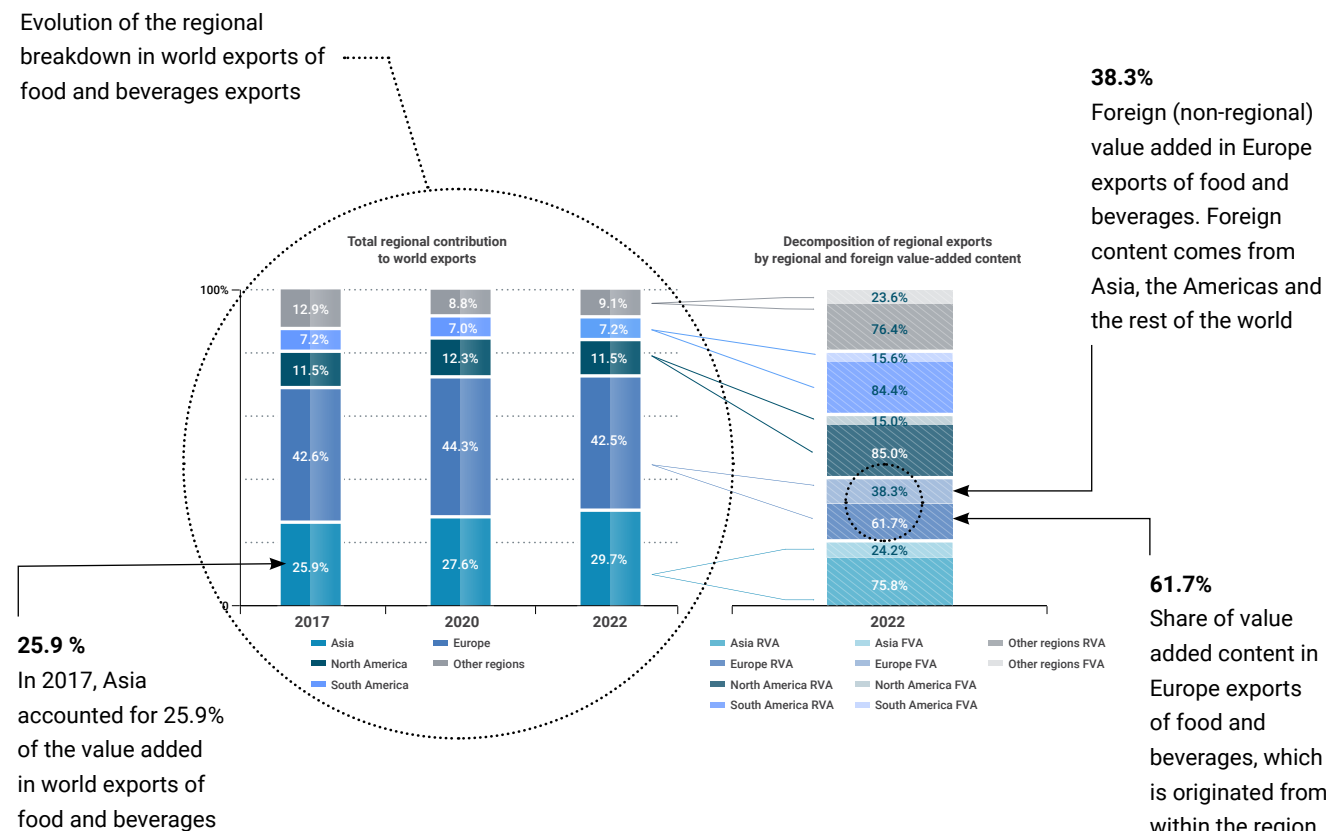
In Figure 2, the bars on the left (2017, 2020 and 2022) show the level of regional contributions to world exports of food and beverages. Regional shares include the total amount of value added exported by economies from the region, thus matching gross exports.

The right-hand bar (2022) breaks down each region's exports into regional and foreign (non-regional) value-added origins. The regional value added (RVA) estimates all intermediate goods and services used for production and which are exclusively sourced from the region. While the "foreign" content (FVA) refers to value-added inputs imported from outside the region.

Figure 2

Regional value added in world exports of food and beverages, 2017-2022

(Share in world and regional exports of food and beverages, in per cent)



Source: WTO calculations based on ADB data (June 2023 version).

Note: see Annex for regional coverage in ADB MRIO tables.

Major contributors to value-added trade

Figure 3 presents, for major regional exporters, the shares of domestic and foreign value-added content in exports from the industry under review (see left axis). The right scale of the graph shows the yearly average evolution of the domestic value-added content between 2017 and 2022.

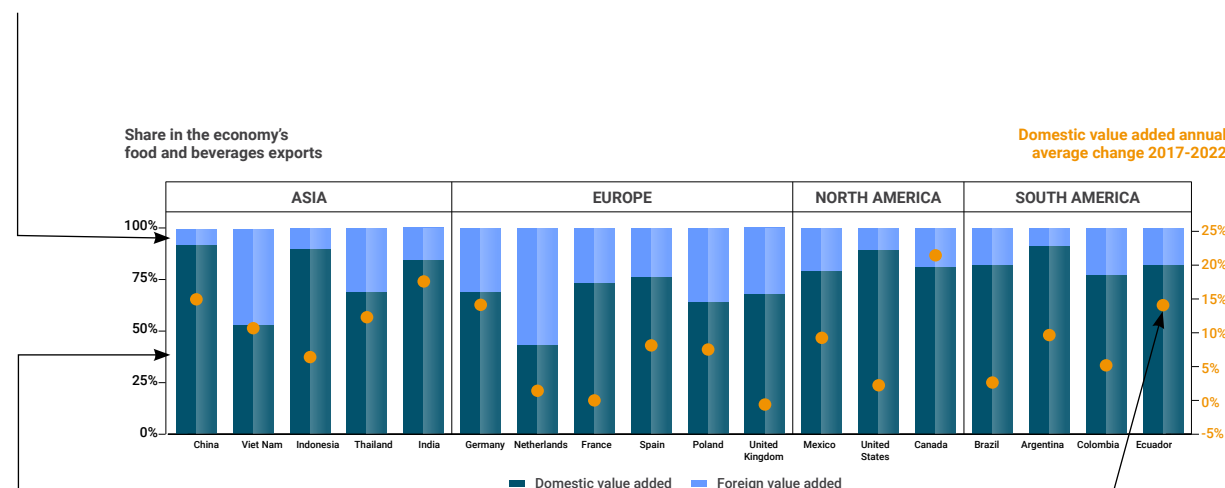
The domestic value-added content of exports indicates the economy's capacity (either from domestic companies or foreign ones located in the national territory) to create inputs used for its production of goods and services devoted to exports. The foreign value-added content shows the level of inputs imported from regional and global suppliers contained in exports.

Figure 3

Domestic and foreign value-added content in exports of food and beverages, major exporters, 2022

(Share in the economy's exports of food and beverages, in per cent, and annual average percentage change 2017-2022)

Foreign value added from inputs imported either from regional or global partners to produce exports



Domestic value added content in exports generated in the economy

14.2%
2017-2022 annual average growth of the domestic value added content in Ecuador's exports of food and beverages

Source: WTO calculations based on ADB data (June 2023 version).

Key players in the industry's GVCs

Figure 4 highlights the economy-industry pairs that contributed the most to supply chains in the industry under review, with their shares in the total value-added contained in world exports.

As shown in Figure 1, industries other than the exporting one contribute significantly to world value added exports. Intermediate goods and services used for production originate from all over the world, ranging from primary commodities to manufactured parts, components or accessories as well as services supplied all along the production process.

Figure 4

Top 20 value-added contributors to world exports of food and beverages, 2022

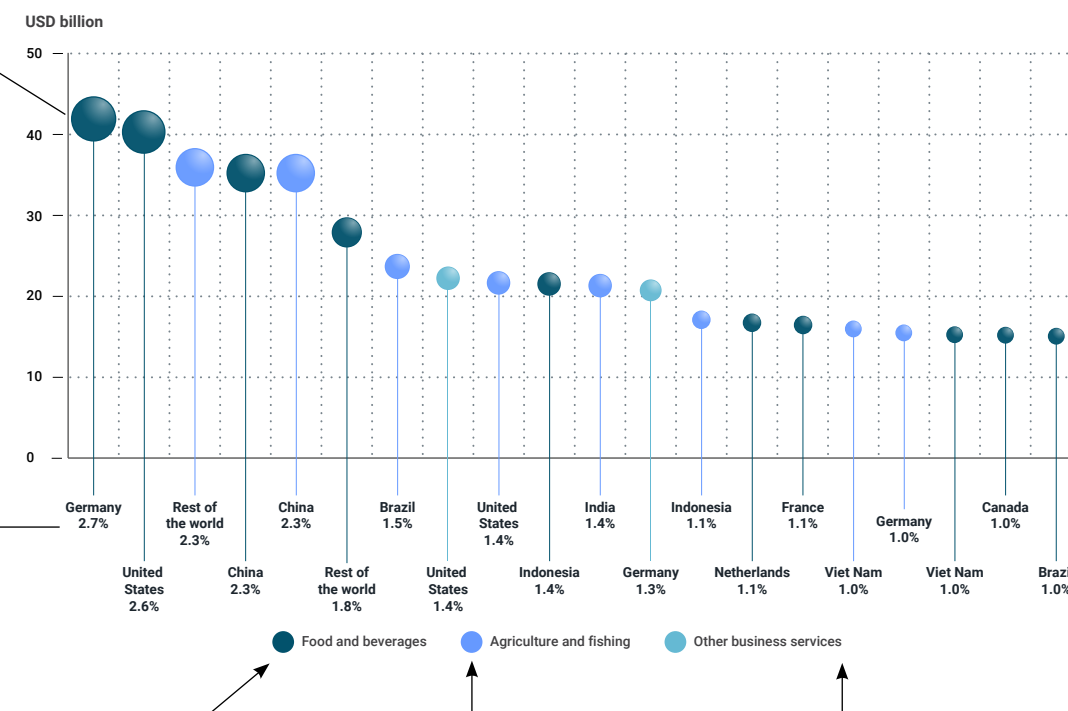
(USD billion and share in world exports of food and beverages, in per cent)

42 USD billion

Estimated level of value added from German food and beverages industry in world exports from the sector in 2022

2.7%

In 2022, the value added contribution of the German food and beverages industry to world exports from the sector was estimated at 2.7%



Value added from the exporting industry under review (food and beverages)

Value added from other supplying industries located upstream in the production chain

Source: WTO calculations based on ADB data (June 2023 version).

Notes: Rest of the world includes all economies not shown individually in the ADB-MRIO Tables.

The size of the circles reflects the estimated value-added contribution of economy-industry pairs to world trade.

Backward and forward GVC participation

GVC participation indicators show how economies are connected to supply chains for their production and foreign trade activities. Economies trade within GVCs in two ways:

- By importing intermediate goods and services to create the products they export. This is referred to as “backward GVC participation” or the “buyer” side in GVCs. In value-added terms, this is the foreign value-added content of exports, which includes inputs imported from regional and global partners (see Figure 5).
- By exporting domestically produced inputs to industrial partners for further processing and export to third economies. This is referred to as “forward GVC participation” or the “seller”/“supplier” side in GVCs. In value added terms, it entails the national value embedded in the goods and services exported by partners located downstream in the production chain.

Figure 6 refers to value-added inputs from the domestic food and beverages industry sent to any industry in partner economies for further processing and export to supply chains or for final consumption.

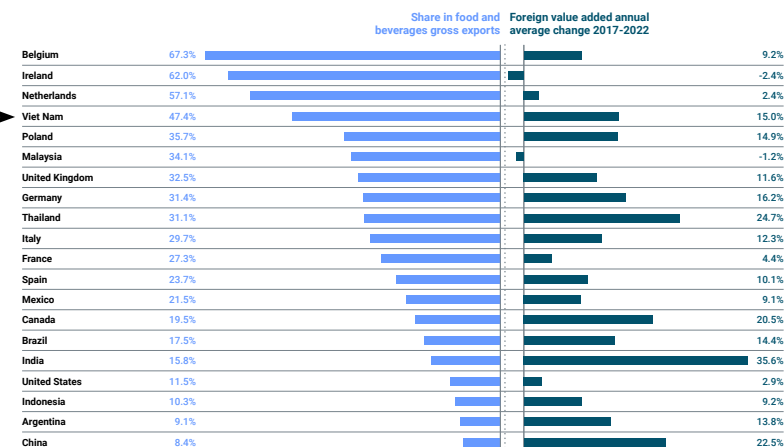
Figure 5

Selected exporters' foreign value-added content, 2022

(Share in the economy's exports of food and beverages, in per cent, and annual average percentage change 2017-2022)

47.4%

Viet Nam exports of food and beverages included 47.4 % of foreign content in 2022



24.7%

The foreign content in Thailand exports of food and beverages rose on average by 24.7% per year between 2017 and 2022

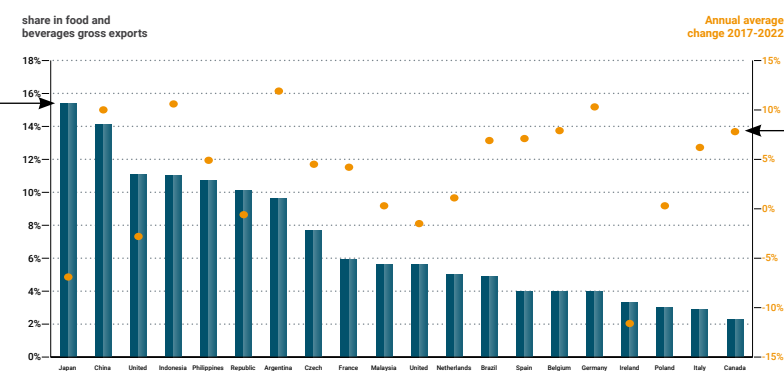
Figure 6

Selected exporters' food and beverages inputs sent to GVCs, 2022

(Share in the economy's exports of food and beverages, in per cent, and annual average percentage change 2017-2022)

15.4%

The share of Japanese domestic inputs in food and beverages exports sent to third economies in supply chains, for their exports

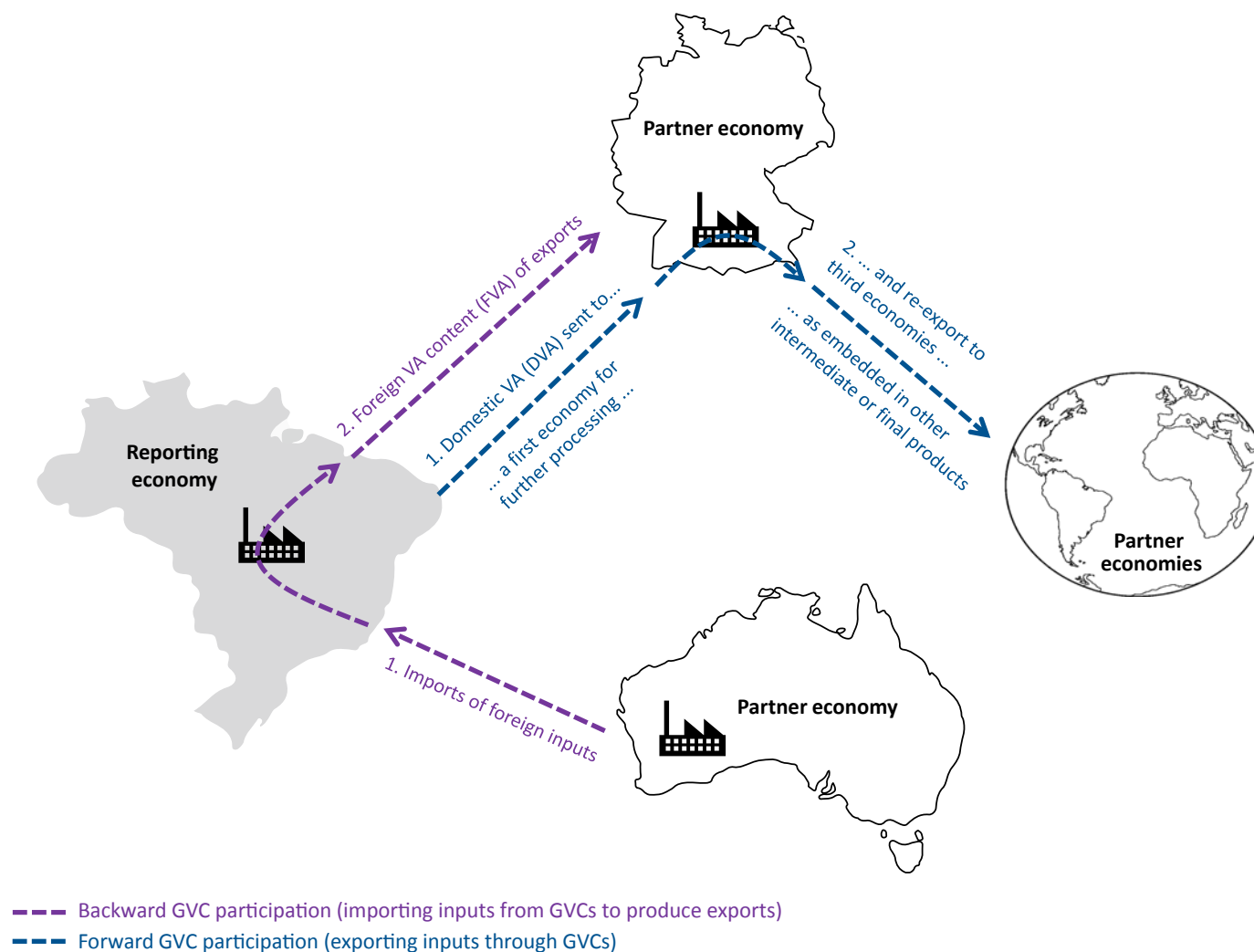


7.8%

Canada shipments of food and beverages ingredients to next GVC stages rose on average by 7.8% per year between 2017 and 2022

Source: WTO calculations based on ADB data (June 2023 version).

Illustration of trade flows taking place in GVCs



Glossary

THE DIFFERENT VALUE-ADDED CONTENTS OF GROSS EXPORTS

Domestic value added (DVA)

Value added of inputs (see definition below) that are domestically generated by national industries for the production and export of goods or services.

Foreign value added (FVA)

Value added of inputs imported from GVC (see definition below) partners for the production of other intermediate or final goods or services.

Regional value added (RVA)

Value added of inputs produced by each economy in the region or sourced from within the region to produce goods or services for export.

DEFINITIONS ON GLOBAL VALUE CHAINS

Global value chains (GVCs)

The international organization of investment, production and trade where the different stages of production of goods and services are located across various countries and industries. In the profiles, the term “GVCs” is used interchangeably with “Value chains”, “Supply chains”, “Production chain” or “Production networks”.

GVC backward participation

Corresponds to the “Foreign value added (FVA) content of exports”, or “Vertical specialization”. It is the “Buyer” or “Importer” side in GVCs when an economy imports inputs from foreign suppliers to produce the goods and services it exports. “Importing to export” is a key message derived from TiVA concepts.

GVC forward participation

This is the “Seller” or “Exporter” side in GVCs when an economy produces and exports inputs to GVC partners located downstream in the production chain.

Industry position in GVCs – Upstream vs downstream location in GVCs

Upstream and downstream both refer to relative positions of industries in the production chain. A primary commodities’ producer will be located in an upstream position, if not at the beginning of the chain as it exports raw inputs to partners in charge of downstream production stages. While a car assembly factory will be located downstream, if not at the end of the international production chain as it delivers vehicles for final consumption and exports.

OTHER DEFINITIONS

Input

Intermediate good (e.g. corn, iron ores, parts, components, accessories, ...) or service (e.g. consultancy, distribution, transport activities) used in a production process and which are intensively exchanged among GVCs.

Value added

Value that is added by an industry during its production of goods or services. The notion of value added includes: 1. Compensation for labour 2. Profits 3. Other taxes on production. It corresponds to the difference between the output (result of the production) and the sum of all intermediate inputs used for its production.

Annexes

Annex 1 - Economies, by region



Asia

Australia	Malaysia
Bangladesh	Maldives
Bhutan	Mongolia
Brunei Darussalam	Nepal
Cambodia	New Zealand
China	Pakistan
Fiji	Philippines
Hong Kong, China	Singapore
India	Sri Lanka
Indonesia	Chinese Taipei
Japan	Thailand
Korea, Republic of	Viet Nam
Lao People's Democratic Republic	



Europe

Austria	Lithuania
Belgium	Luxembourg
Bulgaria	Malta
Croatia	Netherlands
Cyprus	Norway
Czech Republic	Poland
Denmark	Portugal
Estonia	Romania
Finland	Slovak Republic
France	Slovenia
Germany	Spain
Greece	Sweden
Hungary	Switzerland
Ireland	Türkiye
Italy	United Kingdom
Latvia	



North America

Canada
Mexico
United States



South America

Argentina
Brazil
Colombia
Ecuador



Other regions

Armenia
Egypt
Georgia
Kazakhstan
Kuwait
Kyrgyz Republic
Rest of the World
Russian Federation
Saudi Arabia
United Arab Emirates

Annex 2 - Industries' names, main categories and ISIC codes

Industry label	Main industry category	ISIC Rev 3.1 Division
Agriculture and fishing	Primary	01-02, 05
Mining and quarrying	Primary	10-14
Food and beverages	Manufacturing	15-16
Textiles and clothing	Manufacturing	17-18
Leather	Manufacturing	19
Wood	Manufacturing	20
Paper	Manufacturing	21-22
Refined fuels	Manufacturing	23
Chemicals	Manufacturing	24
Rubber and plastics	Manufacturing	25
Other minerals	Manufacturing	26
Metals	Manufacturing	27-28
Other machinery	Manufacturing	29
Computer, electronics, and electrical equipment	Manufacturing	30-33
Transport equipment	Manufacturing	34-35
Other manufacturing	Manufacturing	36-37

Industry label	Main industry category	ISIC Rev 3.1 Division
Utilities	Services	40-41
Construction	Services	45
Sale of motor vehicles	Services	50
Wholesale trade	Services	51
Retail trade and repair	Services	52
Hotels and restaurants	Services	55
Inland transport	Services	60
Water transport	Services	61
Air transport	Services	62
Other transport services	Services	63
Telecommunications	Services	64
Finance	Services	65-67
Real estate	Services	70
Other business services	Services	71-74
Public administration	Services	75
Education	Services	80
Social work	Services	85
Other personal services	Services	90-93
Private households	Services	95